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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,912	12/26/2001	Sung Hee Park	P67475US0	7598

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EXAMINER	
WOZNIAK, JAMES S	

ART UNIT	PAPER NUMBER
2626	

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/025,912	PARK ET AL.	
	Examiner	Art Unit	
	James S. Wozniak	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the office action from 7/7/2006, the applicant has submitted an amendment, filed 9/22/2006, amending the claims 1, 5, and 7, while arguing to traverse the art rejection based on the amended limitations *(Amendment, Page 5)*. The applicant's arguments have been fully considered but are moot with respect to the new grounds of rejection in view of Hermes et al *("Image Retrieval for Information Systems," 1995)* and Liu et al *(U.S. Patent: 6,970,860)*.

Claim Objections

2. **Claim 3** is objected to because of the following informalities:

In claim 3, line 3, "the word not representing the color" should be changed to –a word not representing the color-- in order to provide proper antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1-3 and 5-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hermes et al *("Image Retrieval for Information Systems," 1995)* in view of Liu et al *(U.S. Patent: 6,970,860)*.

With respect to **Claims 1, 5, and 7**, Hermes discloses:

A dictionary storing means for storing a dictionary used for processing a natural language *(stored natural language text descriptions associated with image features, Page 396, Section 2)*;

A color/shape threshold storing means for storing color histograms mapped to color related words and edge information corresponding to shape related words *(color histograms and related contour data associated with search terms stored in the IRIS system, Pages 396-399, Sections 2.1-2.1.3; and Fig. 2)*;

A query input means for receiving a query that describes the color and the shape of the image by using a natural language *(input query in a natural language to the IRIS system, Page 395, Section 2, Page 404, Section 4; and Fig. 8)*;

An analyzing means for analyzing the query sentence based on the dictionary information and generating analyzed words *(query processing (analysis) to retrieve an image, Fig. 8; and Page 403, Section 3)*;

A color/shape recognizing means for recognizing whether the analyzed words represent the color or the shape *(color and shape based query processing, Fig. 8)*;

A color/shape threshold database constructing means for mapping and storing color histograms to color related words and storing edge information corresponding to shape related

words *(IRIS database that maps image features including shape and color to user concepts in a natural language for image retrieval, Pages 395-400, Sections 2-2.3)*;

A color/shape threshold retrieving means for retrieving the color histograms and the edge information corresponding to the analyzed words from the color/shape threshold storing means and retrieving an image satisfying the retrieved color histograms and edge information *(query processing that retrieves an image corresponding to color and edge information in the IRIS system, Pages 403-404, Section 3; and Fig. 8)*; and

A retrieving result output means for providing image data searched in the color/shape threshold retrieving means *(query results and corresponding thumbnail images, Fig. 8)*.

Although Hermes discloses the ability of a user to input a natural language query to locate a desired image, Hermes does not explicitly note that such a query may be in the form of a natural language sentence. Hermes also fails to disclose a means for analyzing such a sentence. Liu, however, discloses a process for enabling a user to provide a natural language input to a search engine for image retrieval, wherein the input is in the form of a natural language sentence *(natural language text entry area, Col. 5, Lines 45-55)*. Liu also recites a natural language parser that identifies keywords through syntactic and semantic information in the input sentence and utilizes the keywords in a matching process to retrieve an image *(NL parser, Col. 5, Lines 56-65; and the matching of extracted keywords to histogram, shape, and texture information associated with an image, Col. 6, Lines 38-58)*.

Additionally, with respect to claim 7, Liu recites an image retrieval method implementation as a program stored on a computer readable medium *(Col. 4, Lines 19-31)*.

Hermes and Liu are analogous art because they are from a similar field of endeavor in image retrieval systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Hermes with the natural language sentence parsing elements taught by Liu in order to provide a means for better understanding and identifying search terms in an image retrieval process *(Liu, Col. 5, Lines 56-65)*.

With respect to **Claims 2, 6, and 8**, Liu discloses image annotation when no pertinent images are retrieved *(Col. 9, Lines 18-23; and Col. 5, Lines 19-25)*, while Hermes recites query terms related to color and shape as applied to Claim 1.

With respect to **Claim 3**, Hermes further discloses:

The color/shape threshold constructing means maps the word representing the color to the color histogram and stores the word representing the color mapped to the color histogram *(mapped image features associated with a color histogram, Pages 396-397, Section 2.1)*, the word not representing the color but reminding the color along with the corresponding color histogram *(additional words mapped to a color histogram, Page 403, Section 3)* and the edge information corresponding to the shape related word *(mapped contour (shape) features for image retrieval, Pages 398-399, Section 2.1.3)*.

5. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hermes et al in view of Liu et al and further in view of Jain et al *(U.S. Patent: 5,983,237)*.

With respect to **Claim 4**, Hermes in view of Liu teaches the image query system utilizing color and shape information, as applied to claim 3. Hermes in view of Liu do not specifically

disclose the use of a qualification relation, however Jain teaches such a relation *(Col. 9, Lines 12-24)*.

Hermes, Liu, and Jain are analogous art because they are from a similar field of endeavor in image retrieval systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Hermes in view of Liu with the qualification relations taught by Jain in order to eliminate unnecessary visual senses when constructing a query *(Jain, Col. 9, Lines 18-20)*.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Vaithilingam et al *(U.S. Patent: 6,411,724)*- teaches descriptors for still images in an image retrieval process that include color, shape, and texture.

Mathias et al *("Comparing the Influence of Color Spaces and Metrics in Content-based Image Retrieval," 1998)*- teaches an image retrieval system utilizing color-based queries.

Zachary et al *("Content Based Image Retrieval Systems," 1999)*- provides an overview of several color and shape based image retrieval systems.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached at (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James S. Wozniak
10/30/2006

DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
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